Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the matter of	)	
	)	
Review of Part 15 and other Parts	)	ET Docket No. 01−278
of the Commissions Rules	)	RM−9375
	)	RM−10051

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To: The Commission

Comment of Bruce Perens

The proposed rule−making is really the first step in creating a worldwide coordination for a new ISM band. As is made clear by the comments of Mattel and others, there would be significant pressure after this rule−making to expand the allocation beyond the parameters specified by SAVI. For example, Mattel proposes a narrow−bandFM application with continuous transmission.

The sole reason for consideration of spectrum around 433 MHz is the use of that frequency for ISM applications outside of the United States. SAVI cites the need for RF tags to operate internationally. Mattel cites the cost of producing multiple designs of baby−monitor, because U.S. frequency allocations are not the same as those elsewhere. Sufficient U.S. ISM and Part 15 spectrum currently exists for all of these applications, as is demonstrated by the existing widespread deployment of RF tags and baby monitors within our borders. But that spectrum is not internationally coordinated to the extent that it is available, *with the same parameters,* in every nation.

The allocation of a worldwide ISM band *with uniform parameters* across all international borders may be a worthwhile goal, but this proceeding is *not* the proper venue for such a project. Such a project should be pursued via ITU, with all member administrations c*ommitting to authorize the same set of technical parameters within their borders.* Otherwise, use of this spectrum will be constrained by the lowest common denominator of technical parameters supported by all nations, and those parameters will be *uncoordinated.* This will lead to continuing problems in deployment from region to region, and continuing pressure on national regulators to broaden their parameters to match those of other nations. Should this matter be undertaken in a coordinated fashion via ITU, it is likely that a more appropriate frequency band would be selected. Perhaps that band would be one that is already allocated for ISM use within the United States.

The 420 to 450 MHz frequency band is the most heavily used frequency band in the Amateur Radio Service and the Amateur Satellite Service. The word *Amateur* belies the importance of the applications Radio Amateurs support in this spectrum. A primary application of the spectrum is **education** in radio and electronic technology. Another application is emergency communications, especially when a disaster has caused a communications infrastructure collapse or when the temporary need for emergency communications overwhelms the existing infrastructure.

Radio Amateurs are unique in that they are the only existing corps with sufficient size, skill, resources, and geographic distribution to be able to improvise emergency communications for any situation, no matter how large, remote, or specialized. An incursion into the 420 to 450 MHz band will reduce the ability of Amateurs to provide emergency services, in a time when our nation seeks to improve, not reduce, its homeland defense and disaster−recoverycapabilities.

The interference studies submitted by SAVI depend on several specious propositions: that Amateur communications are carried out using FM, using strong signals with sufficient system fade margin to accommodate a significant increase in the noise floor, and that the interfering SAVI equipment will be at a different frequency from that used for the Amateur operation. In reality, there is nothing preventing the proposed SAVI equipment from being used on the same frequency as on−going Amateur communications. Those communications may well be weak−signal, using SSB orother modulation schemes that are vulnerable to the SAVI signal. In addition, the SAVI interference studies posit that the use of the proposed allocation would remain within SAVI's proposed parameters: in reality, there would be significant pressure, as demonstrated by Mattel's comment, to broaden those parameters to include other applications, modulation modes, bandwidths, and duty cycles.

SAVI's assertion that their users would be geographically separated from Radio Amateur operations is also specious. The proposed devices would be used by retail merchants, retail operations are located in every community, in close proximity to housing where Amateur operations are located. In addition, Amateurs are often called on to provide emergency services in areas that are convenient to emergency victims, such as a town center, and that is exactly where retail merchants are most concentrated. Another proposed user is delivery service operators such as United Parcel Service and Federal Express. These are mobile operations, and daily travel to within a few meters of the residential locations housing Amateur operations.

RF tag implementors propose to reduce the cost of the tags to just a few cents, so that they can replace UPC stickers on retail items. This means that they will be constructed entirely from printed components, will derive their power from the interrogator tranmsitters signal as in current

anti−shoplifting tags, and will employ resonant schemes to generate a reply. Such equipment can not be selective, and is extremely likely to create intermodulation and parasitic radiation. Many RF tags are meant to be embedded in consumer products that are intended to reach the residence. Often the tags will be embedded *inside* of the product where the consumer can not remove them, in order to prevent their removal by shop-lifters. The tags will remain operational for decades after the sale. It is likely that they will be activated by strong signals from the nearby use of Amateur equipment. There will be many such tags in the Amateur's home, near and even *on* the Amateur equipment. This will create a mess of parasitic radiation, intermodulation, and interference for every Amateur. This is yet another reason that it is essential that RF tags operate in a properly−authorizedISM band, with sufficiently wide guard−bands to protectband-sharing partners from their effects.